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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/547,273	04/11/2000	Glenn Clement Aikens	RSW9-2000-0024-US1	4966

25259 7590 02/23/2005

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EXAMINER	
PRIETO, BEATRIZ	

ART UNIT	PAPER NUMBER
2142	

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/547,273	AIKENS ET AL.	
	Examiner	Art Unit	
	Prieto Beatriz	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-7,11-12 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4-7, 11-12 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 April 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *enclosed*.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This communication is in response to Response to Notice of Non-Compliant Amendment filed 10/11/02, claims 2-3, 8-10, 13-18 have been canceled, claims 1, 4-7, 11-12 and 19 remain pending and have been examined.

2. Regarding examiner's notice of non-compliant amendment mailed 9/10/04, requirement(s) applicable to instant application are those provided on MPEP §2163 B (II), applicant's remarks are acknowledged/noted.

Claim Rejections 35 U.S.C. § 103

3. Quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action may be found in previous office action.

4. Claims 1, 4-5, 7, 11-12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brichta U.S. Patent No. 5,864,483 in view of McKnight U.S. Patent No. 6,557,035.

Regarding claim 1, computer implementation method (col 9/lines 28-34) of monitoring network performance services (col 1/lines 37-50), having established performance requirements criteria by the provider or customers (col 1/lines 10-19, 61-65);

monitoring a network performance measurement on a recurring basis to obtain samples of the metric value (Brichta, samples: col 3/lines 36-49, monitoring: col 3/line 54-56, col 6/lines 67-col 7/line 5, and metric values obtained on recurring basis: col 7/lines 15-37);

determining a non-random pattern "trends" in actual services based on obtained samples of the metric (Brichta: identify patterns, col 2/lines 20-39, col 8/lines 60-63), said determining step including the further steps of:

analyzing a set of samples collected over a predetermined sampling time for determining for each occurrence of the sample whether the analyzed sample satisfies a predetermined level (i.e. a sample "set" size, col 2/lines 2-17, predetermined acceptable values col 3/lines 60-67, sample population rolling "over time" time period, col 7/lines 30-37, determine whether the analyzed sample satisfies a predetermined level over time, col 9/lines 16-27);

determining predetermined sample criteria including an upper and lower control limits associated with said metric value (Brichta: col 7/lines 6-49) and terminating the step of using the set of occurrences in the sample population set that fail to satisfy the predetermined sample criteria for analysis, by eliminating the occurrences of sample of metric values that do not satisfy said predetermined sample criteria (Brichta: col 11/lines 2-32, i.e. not analyzing any of theses occurrences or using these occurrences for further calculations); however, Brichta does not teach use linear regression to determine said trend nor the time when the services will not meet a performance requirements when determined trend continues.

McKnight teaches obtaining samples of metric values and determining a trend based on the obtained samples of metric values using linear regression (abstract), specifically, monitoring performance parameters (e.g. network performance parameters col 2/lines 13-20) over a period of time to obtain averages of measured network performance parameters, using linear regression analysis to determine a trend in the computed averages (col 2/lines 21-27), including samples obtained over a recurring period of time (col 5/lines 57-67); and determining the time at which services will not meet a predetermined performance requirement when the trend continues (Fig. 6, col 1/lines 1-10, 16-29).

It would have been obvious to one ordinary skilled in the art at the time the invention was made given Brichta's teachings for predicting the time when the current trend in the network performance will exceed a defined threshold including analyzing occurrences of a stable sample set population, the teachings of Mcknight for predicting when network performances with exceed predetermined thresholds, would be readily apparent. Motivation to combine the references teachings would be accurately diagnose system hardware bottlenecks, for longer-term trends preventing or decreasing adverse identified effects such as improper system design, improper software configuration, or excessive usage of human resources, noted by McKnight, using stabilized a sample population sets that eliminate occurrences in said sample that reflect anomalies, deriving trends based on samples attributable to "normal" or "common" causes.

Regarding claim 4, determining whether the standard deviation of the set is greater than a predetermined amount or proportion "percentage" of the mean of the sample, i.e. upper control limit (Brichta: col 10/lines 30-40).

Regarding claim 5, generating an alert if the performance violation time is predicted to fall within a fixed time window beginning at the current time (Brichta: providing an alert, see col 1/lines 61-64 and col 9/lines 11-15).

Regarding claim 7, Brichta and McKnight teaching a system (Brichta col 1/lines 37-50), method (Brichta col 1/lines 51-60) and computer implementation (Brichta col 9/lines 28-34) including a method for providing an alert (col 1/lines 61-64), said method comprising the steps of:

monitoring the provided service to obtain periodically or at predefined periods, i.e. on a recurring basis, sets of network performance samples representing actual network performance (Brichta samples: col 3/lines 46-49, actual network performance: col 3/line 54-56 monitoring: col 6/lines 67-col 7/line 5, recurring: col 7/lines 29-37);

using the obtained sets of samples to generate a mathematical representation of a pattern or trend in the network performance represented by obtained network performance measurements or metric (Brichta pattern: col 7/lines 50-64, trend: col 8/lines 49-col 9/line 27 and mathematical representation, col 10/line 30-67, determine a pattern using a mathematical representation: col 4/lines 17-40);

calculating predefined statistical parameters of each obtained set of samples (Brichta col 7/lines 15-37):

determining whether the calculated statistical parameter meet predefined threshold requirements (Brichta col 2/lines 2-17, predetermined acceptable values col 3/lines 60-67, determine whether the analyzed sample satisfies a predetermined level col 9/lines 16-27);

terminating the step of generating a mathematical representation of a trend in the network performance metric when the calculated statistical parameter for obtained set of samples fails to meet the predefined threshold requirement (Brichta: eliminating the occurrences of sample of metric values that do not satisfy said predetermined a criteria, i.e. not using analyzing any of theses occurrences or using these occurrences for further calculations col 11/lines 2-32);

using a mathematical representation (Fig. 6) predicting the time when the network performance metric will exceed a defined threshold if the trend continues (McKnight: col 1/lines 1-10, 16-29).

generating an alert if the predicted future time (elapsed time) is within a fixed future time window (predetermined time) from the current time (Brichta alert: col 9/lines 11-15).

Regarding claim 11, the calculated statistical parameters comprise the standard deviation and mean of the set of samples (Brichta: col 7/lines 17-28) and the predefined threshold requirement requires that the standard deviation be no greater than a predetermined amount above (percentage) the mean (Brichta: col 2/lines 23-27, col 1/lines 46-49).

Regarding claim 12, this claim comprises the apparatus (i.e. system) associated with the compute-implemented method claim 1 and the system of claim 7, particularly disclosing the apparatuses for performing the steps disclosed on said claims 1 and 7, same rationale of rejection is applicable to this apparatus claim.

Regarding claim 19, this claim comprises the article of manufacture comprising a computer useable medium having a computer readable program embodied in said medium, wherein the computer readable program when executed in the computer causes the computer to perform the method discussed on claim 1 and the system discussed on claims 7, and 12, same rationale of rejection is applicable.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brichta in view of McKnight in further view of Baumann et. al. (Baumann) U.S. Patent No. 5,469,148.

Regarding claim 6, however the above-mention prior art does not teach canceling a previously generated alert in the absence of a prediction that the performance violation time will fall within the fixed time window.

Baumann teaches a monitoring mechanism configured to canceling a previously generated error signal in absence of the occurrence that a performance violation time has occurred within a fixed period of time (col 1/lines 1-9, 39-58, cancel the alarm signal, col 5/lines 7-17);

It would have been obvious to one ordinary skilled in the art at the time the invention was made to include means for canceling a previously generated error signal in absence of the occurrence that a performance violation time has occurred within a fixed period of time, to further cancel a previously generated alert in the absence of a prediction that the performance violation time will fall within the fixed time window, motivation would be to ensure that only deviation in performance occurring over a predetermined period of time are reported before engaging in corrective measures, as suggested by Baumann.

Response to Arguments

6. Regarding claim 1, rejected under 103 over Brichta in view of Tunnicliffle, it is argued that Brichta neither teaches nor suggests analyzing a set of samples to determine whether the "entire" set meets predetermined criteria, because according to applicant, the Brichta reference teaches maintaining only descriptive statistical information for an appropriate period of time, thereby teaching that the descriptive statistical information is retained even if the related detailed services information is discarded.

In response to the above-mentioned argument, claim reads analyzing a set of samples obtained over a period "sampling interval" to determine if the set meets a criteria "predetermine sampling";

Brichta teaches that any occurrence from a sample population of occurrences outside the stable region, (i.e. outside an upper and lower control limit standard deviation with respect to the mean) and eliminated from consideration (Fig. 3A, col 10/lines 64-col 11/line 14, occurrences have been eliminated for that the information can be analyzed see col 11/lines 26-39, sample population of occurrences distribution, see Fig. 3B col 10/line 30-40, col 3/lines 36-59, statistical information (21) specify a statistical mean for the population of sample occurrences of a predetermined sampling period "sample interval", specify a predetermined "sample" control limits and sample size, i.e. a "sample set", see col 7/lines 14-37). Brichta teaches analyzing each occurrence in a sample set sample population to determine if the occurrence meets a predetermined criteria and eliminating occurrences not meet said criteria for analyzing a stable set of samples of the sample population.

7. Regarding claim 4, rejected under 103 over Brichta in view of Tunnicliffle in further view of Aras, it is argued that Brichta nor the secondary references teach analyzing a set of samples to determine whether the standard deviation of the set is greater that a predetermined percentage of the mean of the set of samples.

In response to the above-mentioned argument, Brichta teaches that the distribution of occurrences of the metric value of a sample population obtained over predetermined period, as discussed above, includes (Fig. 3A), an upper control limit (line 44) corresponding to three standards deviations above the mean (line 42); and a lower control limit (line 46), corresponding to three standard deviations below the mean calculated lower control limit, the upper and lower limits each specified by performance requirements criteria information 14 (see col 10/lines 30-40); the statistical information specifies a statistical mean for the population of occurrences, a standard deviation from the statistical mean, an upper control limit defined as a predetermined number of standard deviations above the mean, a lower control

limit defined as a predetermined number of standard deviations below the mean, derived from a predetermined period as a sample population or base (see col 7/lines 14-37); each occurrence in a sample set "sample population" to determine if the occurrence meets a predetermined criteria and eliminating occurrences not meet said criteria for analyzing a stable set of samples of the sample population (col 7/lines 14-37). Brichta teaches determining whether the standard deviation of each occurrence of the sample set population is greater that a predetermined proportion "percentage", i.e. three standards deviations above the mean of the set of samples.

8. Regarding claims 7 and 11, rejected under 103 over Brichta in view of Tunnicliffle, it is argued that Brichta neither teaches nor suggests terminating determination of a trend in network performance if a set of samples fails to meet predefined threshold requirements.

In response to the above-mentioned arguments, Brichta teaches that any occurrence from a sample population of occurrences outside the stable region, (i.e. outside an upper and lower control limit standard deviation with respect to the mean) and eliminated from analysis (Fig. 3A, col 10/lines 64-col 11/line 14, occurrences have been eliminated for that the information can be analyzed see col 11/lines 26-39), suggesting the samples failing to meet predefined threshold are not used for analysis (determination of a trend).

9. Regarding claim 12, rejected under 103 over Brichta in view of Tunnicliffle in further view of Aras, it is argued that none of the reference teaches recited functions.

Applicant's arguments with respect to claim 12 have been considered but are moot in view of the new ground(s) of rejection.

10. Regarding claim 19, rejected under 103 over Brichta in view of Tunnicliffle in further view of Aras, it is argued that none of the recited references teaches ignoring any set of samples, which fail to meet predetermined criteria.

In response to the above-mentioned argument, Brichta teaches ignoring any set of samples, which fail to meet a predetermined criteria (i.e. upper and lower control limits). Specifically, each occurrence in a sample set "sample population" to determine if the occurrence meets a predetermined criteria and eliminating occurrences not meet said criteria for analyzing a stable set of samples of the sample population, see col 7/lines 14-37.

11. Applicant's argument filed 10/11/04 have been fully considered but not found persuasive.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prieto, B. whose telephone number is (571) 272-3902. The Examiner can normally be reached on Monday-Friday from 6:00 to 3:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Jack B. Harvey can be reached on (571) 272-3896. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system, status information for published application may be obtained from either Private or Public PAIR, for unpublished application Private PAIR only (see http://pair-direct.uspto.gov or the Electronic Business Center at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

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P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to the Central Fax Office:

(703) 872-9306, for Official communications and entry;

Or Telephone:

(703) 306-5631 for TC 2100 Customer Service Office.

B. Prieto
TC 2100
Patent Examiner
February 19, 2005

Patent Examiner